

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

1.-19. (Canceled)

20. (Withdrawn) A hyaluronic acid produced by the transformed plant cell according to claim 8.

21. (Withdrawn) A hyaluronic acid produced by the transformed plant or the progeny thereof or the organ thereof or the tissue thereof having the same nature as in the plant according to claim 9.

22. (New) A method of producing hyaluronic acid comprising

(1) a step of transforming a plant cell using an expression recombinant vector comprising

(i) a DNA encoding hyaluronic acid synthase or

(ii) a DNA encoding a polypeptide having an amino acid sequence of the hyaluronic acid synthase,

(2) a step of growing a transformant obtained by transformation of step (1), and

(3) a step of separating the hyaluronic acid produced by the transformant, wherein the hyaluronic acid synthase is derived from a chlorella virus.

23. (New) A method of producing hyaluronic acid comprising

(1) a step of transforming a plant using an expression recombinant vector comprising

(i) a DNA encoding hyaluronic acid synthase or

(ii) a DNA encoding a polypeptide having an amino acid sequence of the hyaluronic acid synthase,

(2) a step of growing a transformant obtained by transformation of step (1), and

(3) a step of separating the hyaluronic acid produced by the transformant, wherein the hyaluronic acid is derived from a chlorella virus.

24. (New) A method of making a transformed plant cell having an ability of producing hyaluronic acid comprising

a step of transforming a plant cell using an expression recombinant vector comprising

(i) a DNA encoding hyaluronic acid synthase or

(ii) a DNA encoding a polypeptide having an amino acid sequence of the hyaluronic acid synthase,

wherein the hyaluronic acid synthase is derived from a chlorella virus.

25. (New) A method of making a transformed plant having an ability of producing hyaluronic acid comprising

a step of transforming a plant cell using an expression recombinant vector comprising

(i) a DNA encoding hyaluronic acid synthase or

(ii) a DNA encoding a polypeptide having an amino acid sequence of the hyaluronic acid synthase,

wherein the hyaluronic acid synthase is derived from a chlorella virus.

26. (New) The method of claim 25 wherein the expression recombinant vector further comprises an organ-specific or tissue-specific promoter, wherein the resulting transformed plant has the ability of producing the organ-specific or tissue-specific hyaluronic acid.

27. (New) A transformed plant cell having an ability of producing hyaluronic acid, obtained by transforming a plant cell using an expression recombinant vector comprising

(i) a DNA encoding hyaluronic acid synthase or

(ii) a DNA encoding a polypeptide having an amino acid sequence of the hyaluronic acid synthase,

wherein the hyaluronic acid synthase is derived from a chlorella virus.

28. (New) A transformed plant, or a progeny thereof or an organ thereof or a tissue thereof, having the ability of producing hyaluronic acid, wherein said plant is obtained by transforming a plant using an expression recombinant vector comprising

(i) a DNA encoding hyaluronic acid synthase or

(ii) a DNA encoding a polypeptide having an amino acid sequence of the hyaluronic acid synthase,

wherein the hyaluronic acid synthase is derived from a chlorella virus.

29. (New) The transformed plant or the progeny thereof or the organ thereof or the tissue thereof of claim 28, wherein the plant is selected from the group consisting of angiosperm, gymnosperm, pteridophyte and bryophyte.

30. (New) The transformed plant or the progeny thereof or the organ thereof or the tissue thereof of claim 28, wherein the organ is one or more organs selected from the group consisting of a root, a stem, a rootstock, a leaf, a flower, a root truncation, a seed, and a shoot apex.

31. (New) The transformed plant or the progeny thereof or the organ thereof or the tissue thereof of claim 28, wherein the tissue is one or more tissues selected from the group consisting of an epidermis, a phloem, a parenchyma, a xylem, and a vascular bundle.

32. (New) The transformed plant or the progeny thereof or organ thereof or the tissue thereof of claim 28, wherein the expression recombinant vector further comprises an organ-specific or tissue-specific promoter, wherein the resulting transformed plant has the ability of producing the organ-specific or tissue-specific hyaluronic acid.